

PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTONA REDISCOVERED HAITIAN RODENT,
PLAGIODONTIA AEDIUM, WITH A SYNOPSIS
OF RELATED SPECIESBy DAVID H. JOHNSON*
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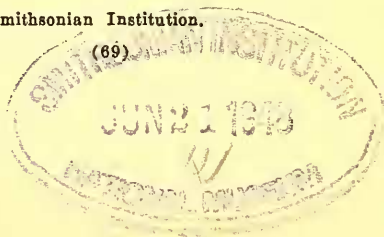
Hutias of the genus *Plagiodontia* are apparently rare in a living state, although their remains are common in cave and kitchen-midden deposits from the island of Hispaniola. Along with *Capromys* of Cuba and *Geocapromys* of Jamaica and certain other West Indian islands, they represent a meager remnant of a once-flourishing Antillean fauna of hystricomorph rodents.

The following seem to be the only living representatives of *Plagiodontia* that have been preserved for scientific study: Two specimens were collected in Haiti in 1830 by Alexander Ricord; one of these was described and illustrated by F. Cuvier (1836) as *Plagiodontia aedium*, and an account of the other under the same name was later given by Gervais (1854, pp. 346-347). Thirteen specimens were obtained in 1923 by W. L. Abbott near Jovero, northeastern Dominican Republic, for the United States National Museum; they were described by Miller (1927) as *Plagiodontia hylaeum*. Two further specimens of the latter species were collected for the Museum of Comparative Zoology by William J. Clench in 1937 (G. M. Allen, 1942, p. 118.) *P. hylaeum* is said by Ellerman (1940, p. 134) to be represented by one specimen in the British Museum.

Among numerous lots of bones and teeth from cave and kitchen-midden deposits in Haiti and the Dominican Republic, Miller (1916a, 1916b, 1927, 1929a, 1929b, 1930) distinguished three species of *Plagiodontia*, referring one to *P. hylaeum*, the second provisionally to *P. aedium*, and describing the third as *P. spelaeum*.

Mr. Anthony Curtiss of Port-au-Prince has recently presented to the U. S. National Museum a freshly preserved hutia collected by himself in February, 1947, near Miragoane on the southwestern peninsula of Haiti. On comparison with Cuvier's original description and illustrations, this specimen proves to be identical with *Plagiodontia aedium*, which had not been collected in more than a century and was believed to have become extinct (see G. M. Allen, 1942, pp. 116-119). In addition to demonstrating that the species still survives in Haiti, this specimen makes possible a direct comparison between *P. aedium* and its congeners. The large

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JUN 28 1948

extinct hutia, which is abundantly represented in the kitchen-midden deposits of coastal Dominican Republic and which has been assumed to represent *P. aedium*, proves to be quite distinct and requires a new name.

The genus *Plagiodontia* is therefore shown to include four species, of which two are living and two are apparently extinct.

The habits of these animals are practically unknown. Mr. Curtiss writes that *P. aedium* of Haiti is called "agouti" in Creole and "is well known to the country people of the region, who have dogs trained to catch it." Dr. Abbott received his Dominican specimens of *P. hylaeum* from an old man who "caught them with dogs in hollow trees down near a lagoon near sea shore." Because of its shorter and blunter claws and shorter feet, *P. aedium* is judged to be more terrestrial and less arboreal than *P. hylaeum*.

SPECIES KNOWN IN A LIVING STATE

Plagiodontia aedium F. Cuvier

Plagiodontia aedium F. Cuvier, 1836, p. 347 (original description and illustrations); Gervais, 1854, pp. 346-347 (description, and figure of teeth); Elliot, 1904, pp. 395-396 (reproduction of Cuvier's illustrations).

Type specimen.—Muséum National d'Histoire Naturelle, Paris, no. 1829, mounted skin with skull separate; collected in Haiti in 1830 by Alexander Ricord (Rode, 1945, p. 293).

External characters (based on U. S. N. M. no. 282552).—Body stout and robust; length of head and body 312 mm.; head broad with blunt muzzle; eye small (length of aperture 8 mm.); pinna of ear short and fleshy, not as long as surrounding fur (extending 9 mm. from crown of head, 18 mm. from notch), nearly bare on inner and outer surfaces but bearing on its rim a fringe of long hairs similar to those on head; muffle bare adjacent to narial slits; tail equal to about one third of total length; furred like body on basal one-sixth, otherwise completely devoid of hairs and scaly; diameter at base of bare area 13 mm. tapering to 4 mm. near tip; scales averaging about 1 mm. in diameter, subcircular and sometimes pentagonal, not overlapping, showing weak tendency to arrangement in transverse or diagonal rows but not forming definable rings. Feet broad and stout; palmar and plantar surfaces completely hairless and bearing flattened scales resembling those of tail but more variable in size, shape, and arrangement; palmar and plantar tubercles virtually absent, indicated only by creases in skin of metapodial areas and by callouses on heels; forefoot with subquadrate palm and reduced thumb, the latter a mere protuberance bearing a nail-like claw, third and fourth fingers longest and practically equal, second finger slightly longer than fifth; hind foot with sole twice as long as broad (46 x 23 mm.) first toe distinct but quite short, second to fourth toes subequal, fifth toe somewhat shorter; claws on all feet blunt and strong, those on each foot approximately equal, claws of forefeet averaging near 6 mm. long, those on hind feet near 9 mm. Vibrissae present on mystacial area (up to 70 mm. long), above and behind eye, and on chin.

Pelage on back and sides composed chiefly of gray-based and whitish-tipped hairs between 30 and 40 mm. long, with a sparse intermixture of

gray underfur and a few longer wholly dark bristles; fur of underparts shorter, whitish basally and tipped with a buffy shade.

Color of fur (after 16 months in alcohol, hence considerably altered from original condition): on back Natal Brown (capitalized color terms are from Ridgway, 1912) heavily sprinkled with Cartridge Buff; sides of head between Pinkish Buff and Cinnamon Buff; underparts Dray-Gray overlaid with Cinnamon-Buff, definitely paler than upperparts.

Cranial characters.—Skull resembling that of *P. hylaeum* in general, but differing from it in detail as follows: smaller, greatest length near 69 rather than 75 mm.); postorbital process of frontal almost obsolete, indicated by slight irregularity in supraorbital ridge rather than forming well defined projection; zygomata more evenly arched, seeming relatively more prominent in maxillary region and less so in squamosal region; rostrum weaker, shallowest part of premaxilla above alveolus of incisor 2.5 mm. rather than 4 to 5 mm. in depth; posterior palatine foramina (palatal pits) a single well defined pair opposite posterior border of M¹ rather than opposite anterior border of that tooth as in *P. hylaeum* (which also has one or two additional pits farther back on the palate); anterior margin of pyterygoid vacuity U-shaped rather than V-shaped and not extending anteriorly beyond level of posterior margin of alveolus of M³; mandible with shallower sulcus between articular and coronoid processes.

Teeth smaller than those of *P. hylaeum*; incisors narrower and relatively longer; occlusal surfaces of cheek teeth smaller; toothrows more nearly parallel and with less tendency toward reduction in size of posterior teeth; pattern of cutting edges on cheek teeth similar except for presence in *P. aedium* of incipient fold at anterolateral corner of Pm⁴ (which is continued as a definite groove down the shaft of the tooth) and the absence in *P. aedium* of a similar fold at the postero-lateral corner of M³ (which in *P. hylaeum* sets off a distinct accessory process); labial and lingual folds of lower cheek teeth moderately overlapping, their tips less pointed and their sides less sinuous than in *P. hylaeum*.

Measurements.—Total length (from alcoholic specimen with skull removed) 465 mm.; tail 153; hind foot with claw, 67, without claw, 61; ear from notch 18, from crown 9; greatest length of skull 68.7; condylo-basal length 63.3; palatal length 36.1; zygomatic breadth, 39.7; inter-orbital construction 17.5; mastoid breadth 26.1; occipital depth 16.0; median rostral depth 14.5; nasal length 22.4; breadth of combined nasals 9.0; diastema 14.3; greatest length of mandible 52.3; length of mandibular symphysis 22.6 maxillary tooththrow (alveolar) 17.6; lengths of occlusal surfaces of cheek teeth, Pm⁴ 5.2, M¹ 4.2, M² 4.0, M³ 3.8; mandibular tooththrow (alveolar) 16.5; horizontal expansion of angular process 5.4.

Specimen examined.—One (in alcohol with skull removed and cleaned), from near Miragoane, southwestern Haiti, U. S. N. M. no. 282552.

Plagiodontia hylaeum Miller

Plagiodontia hylaeum Miller, 1927, p. 4.

Type specimen.—U. S. National Museum, no. 239887, male, skin and skeleton; collected at Guarabo, 10 miles east of Jovero, Samana Province, Dominican Republic, November 23, 1923, by W. L. Abbott.

External characters.—As described in detail by Miller (1927, pp. 4-5).

Differing from *P. aedium* in greater size of body (length of head and body of males 348 to 405 as compared with 312 mm.); shorter tail (127 to 146 as compared with 153 mm.); smaller scales on tail and feet; narrower feet with longer and sharper claws; pinna of ear less hairy, its margin more thickened and more evenly rounded; color seemingly darker in general, contour hairs with less contrasting tips, cheeks and underparts essentially similar in color to back rather than distinctly paler, a whitish pectoral spot occasionally present.

Cranial characters.—As described by Miller (*loc. cit.*) and in account of *P. aedium*, above.

Specimens.—A total of 13, including the type (11 skins and skulls with body skeletons, and two in alcohol) from the type locality, U. S. N. M. nos. 239886-898.

Measurements.—See Miller (*loc. cit.*, p. 8).

SPECIES FOUND IN CAVE AND KITCHEN-MIDDEN DEPOSITS

Plagiodontia hylaeum Miller

(Synonymy and characters given above)

Specimens examined.—A total of 35 cranial, mandibular, and dental fragments, as follows: San Lorenzo Bay, Samana Province, Dominican Republic, 13; near Constanza, western La Vega Province, Dominican Republic, 13; cave at Atalaye Plantation, near St. Michel, Haiti, 9.

Miller (1930, p. 4) has also recorded this and an unidentified species of *Plagiodontia* from a deposit in a deep sink hole called the Trujin, on the Massif of La Selle, Haiti. This material has not been re-examined.

Plagiodontia ipnaeum, new species

Plagiodontia aedium, Miller, 1922, p. 4; 1929a, p. 18; 1930, p. 8. (*nec* F. Cuvier, 1836, p. 347).

Type specimen.—U. S. National Museum, no. 254375, median part of skull (lacking most of rostrum and braincase) of adult, sex unknown; collected in kitchen-midden deposit at a Ciguayan village site at Anadel, 2 kilometers east of Samana, Dominican Republic, by Herbert W. Krieger in 1928.

Cranial characters.—Skull (of type specimen) larger than that of any other species of *Plagiodontia*; postorbital processes prominent, but projecting less than in *P. hylaeum*; skull deep; palate constricted anteriorly; palatal pits opposite middle of M^1 ; pytergoid vacuity broad, its anterior margin obtusely pointed; upper toothrows closely approximated anteriorly, divergent posteriorly; cheek teeth progressively smaller from Pm^4 to M^3 , with greatest difference between Pm^4 and M^1 . Mandible (of no. 254380 from the type locality) more massive than in other species; angular process greatly expanded horizontally.

Upper cheek with molar pattern essentially as in *P. hylaeum*, Pm^4 without anteroexternal secondary fold, M^3 with secondary fold on posterior margin; pattern on lower cheek distinguished by failure of labial and lingual folds to overlap.

Measurements.—Skull of type specimen: Interorbital breadth 25.1 mm.; alveolar length of maxillary tooth row 23.3; depth from roof of skull between postorbital processes to posterior edge of palate 20.5 length of occlusal surface of Pm^4 6.9, of M^1 5.4, of M^2 5.1, of M^3 4.6. Mandi-

ble of no. 254380: Length of symphysis at least 31; alveolar length of mandibular tooth row 24.4; horizontal expansion of angular process 9.5.

Specimens examined.—A total of 134 cranial, mandibular, and dental fragments from cave and kitchen-midden sites as follows: Anadel, Dominican Republic (type locality), 43; mouth of San Juan River, 10 kilometers north of Samana, Dominican Republic, 59; near Monte Cristi, northeastern Dominican Republic, 18; near Constanza, western La Vega Province, Dominican Republic, 6; San Pedro de Macoris, Dominican Republic, 1; cave at Atalaye Plantation, near St. Michel, Haiti, 7.

Plagiodontia spelaeum Miller

Plagiodontia spelaeum Miller, 1929a, p. 18.

Type specimen.—U. S. National Museum, no. 253160, right mandible; collected in cave near Atalaye Plantation, near St. Michel, Haiti, March, 1925, by Gerrit S. Miller, Jr.

Cranial characters.—Smallest of the species of *Plagiodontia*; in such characters as can be distinguished in fragmentary material resembling *P. hylaeum* rather than other species; palate moderately constricted anteriorly; upper cheek teeth as in *P. hylaeum* but with M^3 relatively smaller; secondary fold on posterior margin of M^3 well developed; labial and lingual folds of lower cheek teeth overlapping about as in *P. aedium*, less so than in *P. hylaeum*.

Measurements.—Length of occlusal surface of Pm^4 4.5 mm., of M^1 4.1, of M^2 3.6, of M^3 3.7; alveolar length of mandibular toothrow (of type) 16.3; mandibular symphysis (of type) 17.8.

Specimens examined.—A total of 32 cranial, mandibular, and dental fragments from the type locality.

KEYS TO THE SPECIES OF PLAGIODONTIA

Based on external characters:

Underparts distinctly paler than upperparts; length of tail near 150 mm.; ear with fringe of long hairs on rim; claws strong and blunt *P. aedium*.

Underparts colored like upperparts except for an occasional pectoral spot; length of tail near 145 mm.; margin of ear bare; claws relatively slender and sharp *P. hylaeum*.

Based on cranial and dental characters:

Skull smaller; alveolar length of mandibular tooth row less than 18 mm.; postorbital processes (at least in *P. aedium*) virtually absent.

M^3 with posterior fold and accessory process, length of its occlusal surface 2.7 mm.; alveolar length of mandibular tooth row 16.3 mm. *P. spelaeum*.

M^3 lacking posterior fold and accessory process, length of its occlusal surface 3.8 mm.; alveolar length of mandibular tooth row 16.5 mm. *P. aedium*.

Skull larger; alveolar length of mandibular tooth row more than 18 mm.; postorbital processes prominent.

Labial and posterior lingual folds of lower cheek teeth overlapping; postorbital processes relatively long and slender; alveolar length of mandibular tooth row near 20 mm. *P. hylaeum*.

Labial and posterior lingual folds of lower cheek teeth meeting without overlapping; postorbital processes blunter; alveolar length of mandibular tooth row near 24 mm.....*P. ipnaeum*.

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